

Ultra-Low-Power MEMS Selective Gas Sensors, Phase I

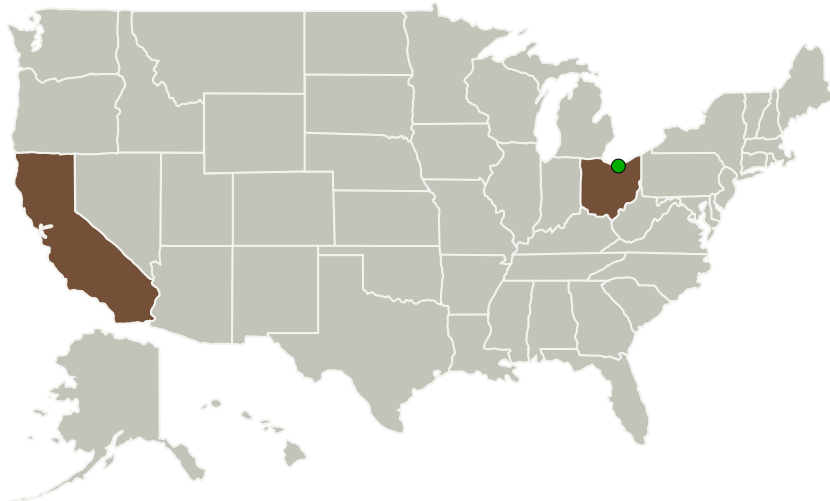
Completed Technology Project (2011 - 2011)



Project Introduction

KWJ offers this proposal for a very low power but very practical "nano-watt" MEMS sensor platform for NASA requirements. The proposed nano-sensor platform is ultra low power and has a long sensor lifetime for extended battery life or power-harvester operation. The extremely fast response time of the sensor (<100 nsec) will be utilized in this SBIR as a possible new and innovative avenue to create selectivity for TCDs. This approach would only be available to very fast detectors like the new KWJ MEMS detector. The sensor is a platform technology designed for multiple analyte measurement on a single chip. In addition to cryogenic system leak detection for CH₄, H₂, and He, the platform can address trace levels of N₂, O₂, and H₂O in gaseous helium purge streams. The SBIR project creates products and spin offs for NASA, industrial, and medical applications.

Primary U.S. Work Locations and Key Partners



Organizations Performing Work	Role	Type	Location
KWJ Engineering, Inc	Lead Organization	Industry	Newark, California
 Glenn Research Center(GRC)	Supporting Organization	NASA Center	Cleveland, Ohio



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Primary U.S. Work Locations

California

Ohio

Project Transitions



February 2011: Project Start



September 2011: Closed out

Closeout Summary: Ultra-Low-Power MEMS Selective Gas Sensors, Phase I Project Image

Closeout Documentation:

- Final Summary Chart Image(<https://techport.nasa.gov/file/138551>)

Organizational Responsibility

Responsible Mission Directorate:

Space Technology Mission Directorate (STMD)

Lead Organization:

KWJ Engineering, Inc

Responsible Program:

Small Business Innovation Research/Small Business Tech Transfer

Project Management

Program Director:

Jason L Kessler

Program Manager:

Carlos Torrez

Principal Investigator:

Joseph R Stetter

Co-Investigator:

Joseph Stetter

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Technology Maturity (TRL)

Start: **3**
Current: **5**
Estimated End: **5**



Technology Areas

Primary:

- TX01 Propulsion Systems
 - └ TX01.2 Electric Space Propulsion
 - └ TX01.2.1 Integrated Systems and Ancillary Technologies

Target Destinations

The Sun, Earth, The Moon, Mars, Others Inside the Solar System, Outside the Solar System